REMARKS

Claims 1 to 40 have been rejected. Claims 3, 4, 20, 23, and 41 have been canceled. Claims 1, 2, 5, 14-16, 21, 22, 33-35, and 39 have been amended. New Claims 42 and 43 have been added. Claim 41 had been withdrawn from consideration. Claims 1,2, 5-19, 21, 22, 24-40 and 42-43 are, therefore, presently pending. Favorable reconsideration of the application in view of the following remarks is respectfully requested.

Restriction under 35 USC § 121:

Restriction to one of the following inventions has been required under 35 U.S.C. 121: Invention I: Claims 1-40, drawn to a shaped article, classified in class 428, subclass 35.7; and Invention II: Claim 41, drawn to a method of forming an article, classified in class 264, subclass 288.4.

During a telephone conversation with the Examiner, Chris Konkol on December 18, 2002 made a provisional election without traverse to prosecute the invention of Group I, claims 1-40. Affirmation of this election is hereby made by Applicants. Claim 41 was withdrawn from further consideration by the Examiner, as being drawn to a non-elected invention, and has now been canceled by the above amendment.

Specification:

The abstract of the disclosure has been objected to due to the use of the word "which" (first occurrence of "which" in the third line of the abstract) and due to the use of legal phraseology used in the abstract such as "comprising".

Applicants have amended the Abstract to provide the required corrections.

Rejection of Claims 1, 3, 14-17, 20-22, 33, 34 and 39 under 35 USC § 112:

Claims 1, 3, 14-17, 20-22, 33, 34 and 39 have been rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. The Examiner states that the term "low-yellowing" in claim 1 is a relative term which renders the claim indefinite. Also, the Examiner states that claim 20 is indefinite for the same reasons. In regard to claims 1 and 21, the Examiner states that term "which" in the second lin of the claims in the phrase

"which microbeads are bordered" is indefinite. The Examiner also considers the term 'substantially free" in claims 3 and 22 is a relative term which renders the claim indefinite. Also, the Examiner considers the term "predominately" in claims 14, 15, 33 and 34 is a relative term which renders the claim indefinite. The Examiner states that claims 16 and 34 are indefinite due to the inconsistency of the spelling of polyethylene terephthalate. Finally, in regard to claim 39, the Examiner considers the phrase "the shaped article is in the shape of...." is indefinite because the scope of the claim cannot be ascertained. The Examiner suggests deleting "in the shape of'.

Applicants have deleted from the amended claims the terms "low-yellowing," "which," "substantially free," "predominantly," and "in the shape of," which terms were identified above as indefinite.

Rejection of Claims 1-7, 9-16, 21-26, 28-35 and 39 Under 35 U.S.C. §102(b):

Claims 1-7, 9-16, 21-26, 28-35 and 39 have been rejected under 35 U.S.C. §102(b) as being anticipated by Maier et al. The Examiner states that Maier et al. teach a shaped article such as a film, sheet, bottle, tube, fiber or rod having a continuous first polymer phase having dispersed therein microbeads of a crosslinked second polymer that are bordered by void space (col. 1, lines 15-19 and col. 7, line 1). The Examiner states that the compositions taught by Maier et al. have superior thermal stability (col. 3, lines 9-11) and are free of the "yellowing with time" problem (col. 5, line 67-col. 6, line 2). The Examiner further states that Maier et al. teach that methyl methacrylate is a typical monomer for making the crosslinked second polymer for making the microbeads (col. 7, lines 47-49 and Examples 15-18 and 23-26, col. 17, lines 35-45); the monomers from which the second polymer is derived, methyl methacrylate, therefore, are substantially free of styrenic monomers (and therefore, contain less than 15 wt% styrenic monomers), in regard to claims 2, 3, 21 and 22.

The Examiner further states, in regard to claims 4 to 7 and 23 to 26, that Maier et al. teach that methyl acrylate (in addition to methyl methacrylate) is a typical monomer for making the crosslinked second polymer for making the microbeads (col. 7, lines 47-51); in regard to claims 9-12 and 28-31, Maier et al. teach that the microbeads have a size of about 0.1-50 micrometers, that the microbeads are present in an amount of about 5-50% by weight based on the

weight of the first polymer and that the voids occupy about 2-60% by volume of the shaped article (col. 4, lines 60-65); in regard to claims 13 and 32, Maier et al. teach that the polymeric microbeads are coated with a slip agent (col. 12, lines 51-53); in regard to claims 14-16 and 33-3 5, Maier et al. teach that the first polymer is a polyester (col. 6, lines 12-17) or a polyolefin such as polypropylene (col. 6, lines 52-53) and that poly(ethylene terephthalate), which may be modified by small amounts of other monomers, is especially preferred as the first polymer (col. 6, lines 44-46).

This rejection is respectfully traversed. The claims have now been amended to state that the microbeads have a thermal stability such that the temperature at which the microbeads experience a 2% weight loss is above 270°C. The microbeads disclosed in the Examples of Maier et al. do not meet this limitation. This is demonstrated by the comparative examples in the present application. In particular, the results in Table 2 (page 21) show that microbeads made from methacrylate monomers do not provide the necessary thermal stability, except when employing acrylic crosslinking monomers (Table 4).

Claim 1 has also now been limited to state that the monomers from which the second polymer is derived comprise less than 10 wt% styrenic monomers and comprise monomers selected from the group consisting of acrylic and allylic monomers such that the microbeads are thermally stable. Furthermore, regarding claim 21, the monomers from which the second polymer is derived comprise not more than 10 wt% styrenic monomer and comprise methacrylate monomers, wherein the microbeads are made from acrylic crosslinking monomers such that the microbeads are thermally stable. Finally, regarding claim 42, the article is required to be a dye diffusion thermal transfer dye receiving sheet.

Rejection Of Claims 18, 19, 37 and 38 Under 35 U.S.C. §103(a):

Claims 18, 19, 37 and 38 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Maier et al. The Examiner states that Maier et al. teach the shaped article as discussed above. The Examiner concedes that Maier et al. fail to explicitly teach that the second polymer is derived from monomers comprising more than 20 wt% of crosslinking monomer. However, the Examiner notes that Maier et al. disclose an example where a monomer phase composed of 3317g of styrene, 1421g divinylbenzene (55%, i.e. about 781g, of

which is crosslinking agent) and 45g of an initiator is prepared (col. 12, lines 64-68); the divinylbenzene percentage crosslinking agent makes up about 16% of the total mass of monomer phase ((781g/4783g) * 100% = about 16%); Maier et al. further disclose that the concentration of divinylbenzene can be adjusted up or down to result in about 2.5-50% crosslinking by the active cross-linker and that monomers other than styrene and divinylbenzene can be used in similar suspension polymerization processes known in the art (col. 13, lines 8-13). The Examiner notes that Maier et at. further disclose that preferred monomers for making the crosslinked polymer include styrene and methyl methacrylate (col. 7, lines 47-55). Maier et al. further disclose that the polymer of the microbeads is crosslinked to the extent of having a resiliency or elasticity at orientation temperatures of the matrix polymer such that a generally spherical shape of the crosslinked polymer is maintained after orientation of the matrix polymer (col. 4, line 68-col. 5, line 4 and col. 13, lines 21-37). The Examiner alleges, therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have varied the concentration of the crosslinking monomer of Maier et al. via routine experimentation in order to achieve the optimal resiliency or elasticity at orientation temperatures of the matrix polymer depending on the monomer used as the monomer from which the second polymer is derived and depending on the end user-result, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

This rejection is respectfully traversed. As indicated above, the claims have now been amended to state that the microbeads have a thermal stability such that the temperature at which the microbeads experience a 2% weight loss is above 270°C. The microbeads disclosed in the Examples of Maier et al. do not meet this limitation. This is demonstrated by the comparative examples in the present application. In particular, the results in Table 2 (page 21) show that microbeads made from methacrylate monomers do not provide the necessary thermal stability, except when employing acrylic crosslinking monomers (Table 4).

R jection Of Claims 8 and 27 Under 35 U.S.C. §103(a):

Claims 8 and 27 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Maier et al. in view of Saito et al. The Examiner states that Maier et al. teach the shaped article as discussed above. The Examiner concedes that Maier et al. failed to teach that the microbeads comprise a copolymer derived from methylmethacrylate and 1,6-hexanediol diacrylate or from methylmethacrylate and trimethylol propane triacrylate. Saito et al., however, disclose a transfer sheet having a thermally transferable protective layer (item 12, Figures 1-3) and optionally a protective layer (item 12a, Figure 3) having an acrylic resin to improve the fastness properties, such as rubbing fastness and scratch fastness, of the protective layer/s (col. 7, lines 17-27). Saito et al. disclose that methylmethacrylate, 1,6-hexanediol diacrylate and trimethylol propane triacrylate are suitable acrylic monomers (col. 7, lines 44-46 and col. 8, lines 25-26and lines 34-35). Saito et al. disclose the use of the disclosed acrylic monomers as a mixture of two or more of the monomers; therefore, Saito et al. disclose the use of copolymers derived from methylmethacrylate and 1,6-hexanediol diacrylate or from methylmethacrylate and trimethylol propane triacrylate. The Examiner alleges, therefore, one of ordinary skill in the art would have recognized to have used a copolymer of methylmethacrylate and 1,6-hexanediol diacrylate or of methylmethacrylate and trimethylol propane triacrylate as the acrylic polymer of Maier et al. in order to improve the fastness properties, such as rubbing fastness and scratch fastness, of the article of Maier et al. as taught by Saito et al.

Claims 8 and 27 are directed to secondary features of the invention and are patentable for the reason that they depend, respectively on claims 1 and 21.

Rejection Of Claims 17 and 36 Under 35 U.S.C. §103(a):

Claims 17 and 36 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Maier et al. in view of Harrison et al. The Examiner states that Maier et al. teach the shaped article as discussed above. The Examiner concedes that Maier et al. fail to teach that the articl is a dye diffusion thermal transfer dye receiving sheet. The Examiner alleges, however, that Harrison et al.

disclose a dye diffusion thermal transfer dye receiving element comprising a support comprising a continuous oriented polymer matrix having dispersed therein microbeads of a cross-linked polymer which are at least partially bordered by void space (col. 2, lines 23-31). Harrison et al. disclose that the dye-receiving element is shaped in sheet form (col. 9, lines 58-60). The Examiner alleges, therefore, one of ordinary skill in the art would have recognized to have used the shaped article of Maier et al. as a dye diffusion thermal transfer dye receiving sheet since it is notoriously well known to use the shaped article of Maier et al. as a dye diffusion thermal transfer dye receiving sheet as taught by Harrison et al.

Claims 17 and 36 are patentable for the reason that they depend, respectively on claims 1 and 21. Further the thermal stability properties of the present invention are particularly advantageous for use in a dye diffusion thermal transfer receiving sheet.

Rejection Of Claim 20 Under 35 U.S.C. §103(a):

Claim 20 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Maier et al. in view of Narita et al.

This rejection is believed moot by the cancellation of claim 20.

Rejection Of Claim 40 Under 35 U.S.C. §103(a):

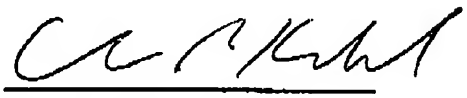
Claim 40 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Maier et at. in view of Hart et al. The Examiner states that Maier et al. teach the shaped article as discussed above. The Examiner concedes that Maier et al. fail to teach that the shaped article is coated with a slip agent comprising silica or alumina. Hart et al., however, disclose a thermal transfer printing receiver sheet (col. 3, lines 6-7) that is coated with a coating that contains a silica slip agent to improve the slip, anti-blocking and general handling characteristics of the sheet (col. 9, lines 37-51). The Examiner states, therefore, one of ordinary skill in the art would have recognized to have coated the article with a slip agent in order to improve the slip, anti-blocking and general handling characteristics of the article as taught by Hart et al.

Claim 40 is directed to secondary features of the invention and is patentable for the reason that the claim depends from claim 1.

It is believed that the foregoing is a complete response to the Office Action and that the claims are in condition for allowance. Favorable reconsideration and early passage to issue is therefore earnestly solicited.

Attached hereto is a marked up version of the changes made to the claims by the current amendment. The attached page(s) is captioned "**Version With Markings To Show Changes Made**."

Respectfully submitted,



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Version With Markings To Show Changes Made

In the Specification:

Please replace the Abstract by the following:

--ABSTRACT

~~Disclosed is~~ ~~A~~a shaped article ~~comprising~~contains a continuous first polymer phase having dispersed therein microbeads made from ~~of~~ a cross-linked second polymer and ~~, which microbeads are~~being bordered by void space, wherein the monomers from which the second polymer is derived are selected to provide microbeads that are both low-yellowing and thermally stable. --

In the Claims:

Please cancel claims 3, 4, 20, 23, and 41 without prejudice.

Please amend Claims 1, 2, 5, 14-16, 21, 22, 33-35, and 39 as follows:

--- 1. (amended) A shaped article comprising a continuous first polymer phase having dispersed therein microbeads of a cross-linked second polymer, ~~which~~ said microbeads being ~~are~~ bordered by void space, wherein the monomers from which the second polymer is derived are selected to provide microbeads that are ~~both low-yellowing and~~ thermally stable, wherein said monomers comprise less than 10 wt% styrenic monomers and comprise monomers selected from the group consisting of acrylic and allylic monomers, wherein thermally stable means that the temperature at which the microbeads experience a 2% weight loss is above 270°C.

2. (amended) The article of claim 1 wherein the monomers from which the second polymer is derived contain less than ~~15~~one wt% styrenic monomers.

5. (amended) The article of claim 41 wherein the monomers from which the second polymer is derived ~~are selected from the group consisting of~~ccomprise acrylic ~~and methacrylic~~ monomers.

14. (amended) The article of claim 1 wherein the first polymer ~~is predominantly~~comprises a polyester or polypropylene polymer.

15. (amended) The article of claim 14 wherein the first polymer ~~is predominantly~~ comprises a polyester polymer.

16. (amended) The article of claim 15 wherein the first polymer is poly(ethylene terephthalate).

21. (amended) A shaped article comprising a continuous first polymer phase having dispersed therein microbeads of a cross-linked second polymer, said ~~which~~ microbeads being ~~are~~ bordered by void space, wherein the monomers from which the second polymer is derived comprise not more than ~~15~~10 wt% styrenic monomer and comprise methacrylate monomers, annd wherein the microbeads are made from acrylic crosslinking monomers such that the microbeads are thermally stable meaning that the temperature at which the microbeads experience a 2% weight loss is above 270°C.

22. (amended) The article of claim 21 wherein the second polymer comprises less than one wt% ~~are substantially free of~~ styrenic monomers.

33. (amended) The article of claim 21 wherein the first polymer ~~is predominantly~~comprises a polyester or polypropylene polymer.

34. (amended) The article of claim 21 wherein the first polymer ~~is predominantly~~comprises a polyester polymer.

35. (amended) The articl of claim 34 wherein the first polymer is poly(ethylene terephthalate).

39. (amended) The article of claim 1 wherein the shaped article is ~~in the shape of~~ a fiber, a rod, a tube, a sheet, a film, or a container. --

Please add the following new Claims 42 and 43:

-- 42. A dye diffusion thermal transfer dye receiving sheet comprising a continuous first polymer phase having dispersed therein microbeads of a cross-linked second polymer, said microbeads being bordered by void space, wherein the monomers from which the second polymer is derived comprise not more than 10 wt% styrenic monomer and wherein the monomers from which the second polymer is derived are selected from the group consisting of acrylicand allylic monomers, such that the microbeads are thermally stable meaning that the temperature at which the microbeads experience a 2% weight loss is above 270°C.

43. The sheet of claim 43 wherein the second polymer is derived from monomers comprising more than 20 wt % of crosslinking monomer. --